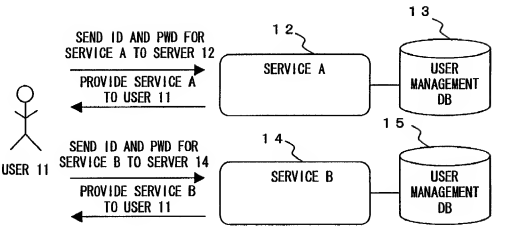
USER 11
SEND ID AND PWD FOR SERVICE A TO SERVER 12
PROVIDE SERVICE A TO USER 11
12
SERVICE A
13
USER MANAGEMENT DB
SEND ID AND PWD FOR SERVICE B TO SERVER 14
PROVIDE SERVICE B TO USER 11
14
SERVICE B
15
USER MANAGEMENT DB

FIG. 1

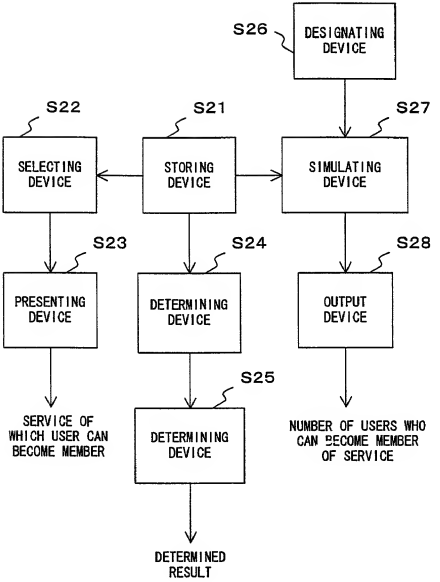
S26
DESIGNATING DEVICE
S22
S21
S27
SELECTING DEVICE
STORING DEVICE
SIMULATING DEVICE
S23
S24
S28
PRESENTING DEVICE
DETERMINING DEVICE
OUTPUT DEVICE
S25
SERVICE OF WHICH USER CAN BECOME MEMBER
DETERMINING DEVICE
NUMBER OF USERS WHO CAN BECOME MEMBER OF SERVICE
DETERMINED RESULT

FIG. 2

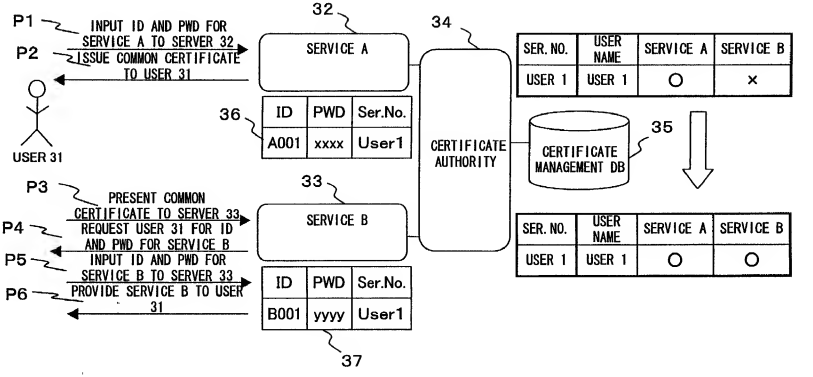
P1
INPUT ID AND PWD FOR SERVICE A TO SERVER 32
P2
ISSUE COMMON CERTIFICATE TO USER 31
USER 31
32
SERVICE A
ID
PWD
Ser.No.
A001
xxxx
User1
36
P3
PRESENT COMMON CERTIFICATE TO SERVER 33
P4
REQUEST USER 31 FOR ID AND PWD FOR SERVICE B
P5
INPUT ID AND PWD FOR SERVICE B TO SERVER 33
P6
PROVIDE SERVICE B TO USER 31
33
SERVICE B
B001
yyyy
User1
37
34
CERTIFICATE AUTHORITY
35
CERTIFICATE MANAGEMENT DB
SER. NO.
USER NAME
SERVICE A
SERVICE B
USER 1
USER 1
O
×
USER 1
USER 1
O
O

FIG. 3A

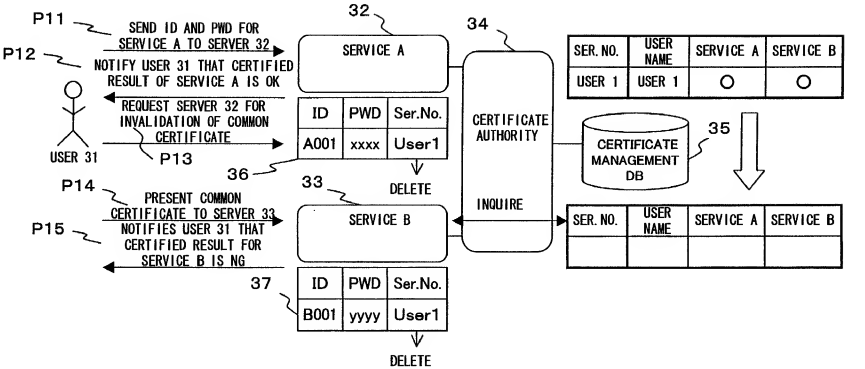
P11
SEND ID AND PWD FOR SERVICE A TO SERVER 32
P12
NOTIFY USER 31 THAT CERTIFIED RESULT OF SERVICE A IS OK
REQUEST SERVER 32 FOR INVALIDATION OF COMMON CERTIFICATE
P13
USER 31
32
SERVICE A
ID
PWD
Ser.No.
A001
xxxx
User1
36
DELETE
34
CERTIFICATE AUTHORITY
INQUIRE
SER. NO.
USER NAME
SERVICE A
SERVICE B
USER 1
USER 1
O
O
CERTIFICATE MANAGEMENT DB
35
P14
PRESENT COMMON CERTIFICATE TO SERVER 33
P15
NOTIFIES USER 31 THAT CERTIFIED RESULT FOR SERVICE B IS NG
33
SERVICE B
37
B001
yyyy
User1
DELETE

FIG. 3B

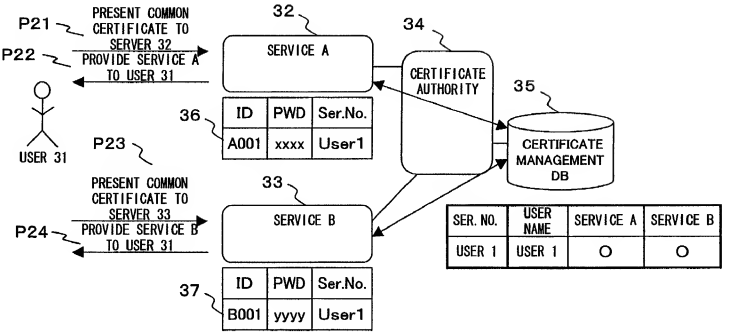
P21
PRESENT COMMON CERTIFICATE TO SERVER 32
P22
PROVIDE SERVICE A TO USER 31
USER 31
P23
PRESENT COMMON CERTIFICATE TO SERVER 33
P24
PROVIDE SERVICE B TO USER 31
32
SERVICE A
33
SERVICE B
34
CERTIFICATE AUTHORITY
35
CERTIFICATE MANAGEMENT DB
36
ID PWD Ser.No.
A001 xxxx User1
37
ID PWD Ser.No.
B001 yyyy User1
SER. NO. USER NAME SERVICE A SERVICE B
USER 1 USER 1 O O

FIG. 4

CERTIFICATE SER. NO.	USER 0001
NAME	FUJITSU TARO
ADDRESS	TOKYO-TO, OOTA-KU
E-MAIL ADDRESS	XXX@XXX.JP

FIG. 5

CERTIFICATE SER. No.	USER 0001
AVAILABLE SERVICE ID	SERVICE A SERVICE B

FIG. 6

USER ID	AAA00000
PASSWORD	XXXXXXXX
NAME	FUJITSU TARO
ADDRESS	TOKYO-TO, OOTA-KU
CERTIFICATE SER. NO.	USER 0001

FIG. 7

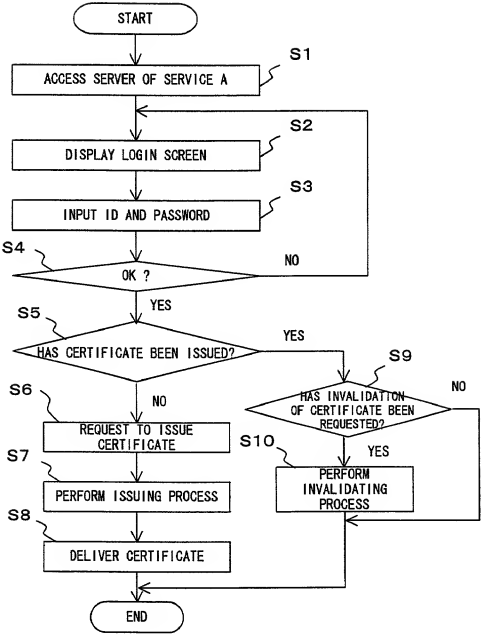
START
S1
ACCESS SERVER OF SERVICE A
S2
DISPLAY LOGIN SCREEN
S3
INPUT ID AND PASSWORD
S4
OK ?
NO
YES
S5
HAS CERTIFICATE BEEN ISSUED?
YES
S9
HAS INVALIDATION OF CERTIFICATE BEEN REQUESTED?
NO
S6
NO
REQUEST TO ISSUE CERTIFICATE
S10
YES
PERFORM INVALIDATING PROCESS
S7
PERFORM ISSUING PROCESS
S8
DELIVER CERTIFICATE
END

FIG. 8

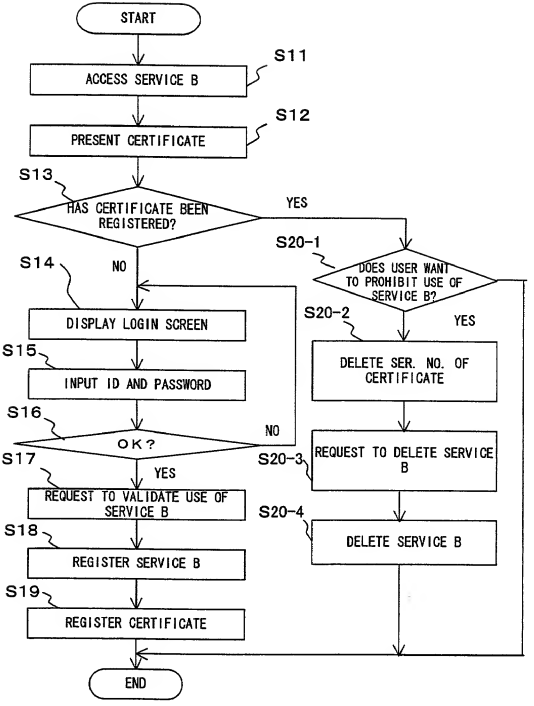
START
S11
ACCESS SERVICE B
S12
PRESENT CERTIFICATE
S13
HAS CERTIFICATE BEEN REGISTERED?
YES
NO
S14
DISPLAY LOGIN SCREEN
S15
INPUT ID AND PASSWORD
S16
OK?
NO
YES
S17
REQUEST TO VALIDATE USE OF SERVICE B
S18
REGISTER SERVICE B
S19
REGISTER CERTIFICATE
END
S20-1
DOES USER WANT TO PROHIBIT USE OF SERVICE B?
YES
S20-2
DELETE SER. NO. OF CERTIFICATE
S20-3
REQUEST TO DELETE SERVICE B
S20-4
DELETE SERVICE B

FIG. 9

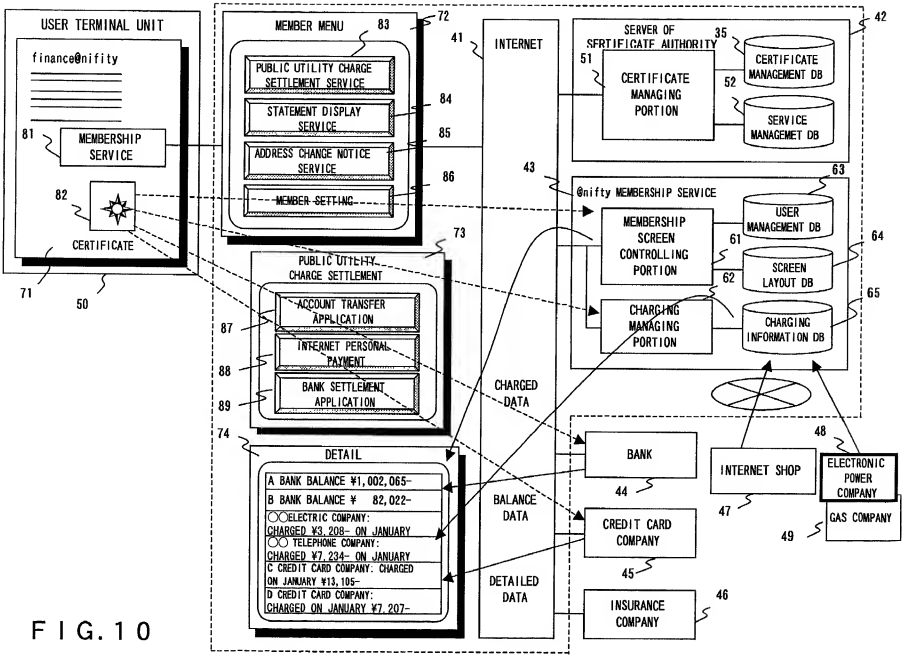
USER TERMINAL UNIT
finance@nifty
MEMBERSHIP SERVICE
CERTIFICATE
MEMBER MENU
PUBLIC UTILITY CHARGE SETTLEMENT SERVICE
STATEMENT DISPLAY SERVICE
ADDRESS CHANGE NOTICE SERVICE
MEMBER SETTING
PUBLIC UTILITY CHARGE SETTLEMENT
ACCOUNT TRANSFER APPLICATION
INTERNET PERSONAL PAYMENT
BANK SETTLEMENT APPLICATION
DETAIL
A BANK BALANCE ¥1,002,065-
B BANK BALANCE ¥ 82,022-
○○ELECTRIC COMPANY: CHARGED ¥3,208- ON JANUARY
○○ TELEPHONE COMPANY: CHARGED ¥7,234- ON JANUARY
C CREDIT CARD COMPANY: CHARGED ON JANUARY ¥13,105-
D CREDIT CARD COMPANY: CHARGED ON JANUARY ¥7,207-
INTERNET
CHARGED DATA
BALANCE DATA
DETAILED DATA
SERVER OF CERTIFICATE AUTHORITY
CERTIFICATE MANAGING PORTION
CERTIFICATE MANAGEMENT DB
SERVICE MANAGEMET DB
@nifty MEMBERSHIP SERVICE
MEMBERSHIP SCREEN CONTROLLING PORTION
USER MANAGEMENT DB
SCREEN LAYOUT DB
CHARGING MANAGING PORTION
CHARGING INFORMATION DB
BANK
CREDIT CARD COMPANY
INSURANCE COMPANY
INTERNET SHOP
ELECTRONIC POWER COMPANY
GAS COMPANY
41
42
43
44
45
46
47
48
49
50
51
52
61
62
63
64
65
71
72
73
74
81
82
83
84
85
86
87
88
89
35

FIG. 10

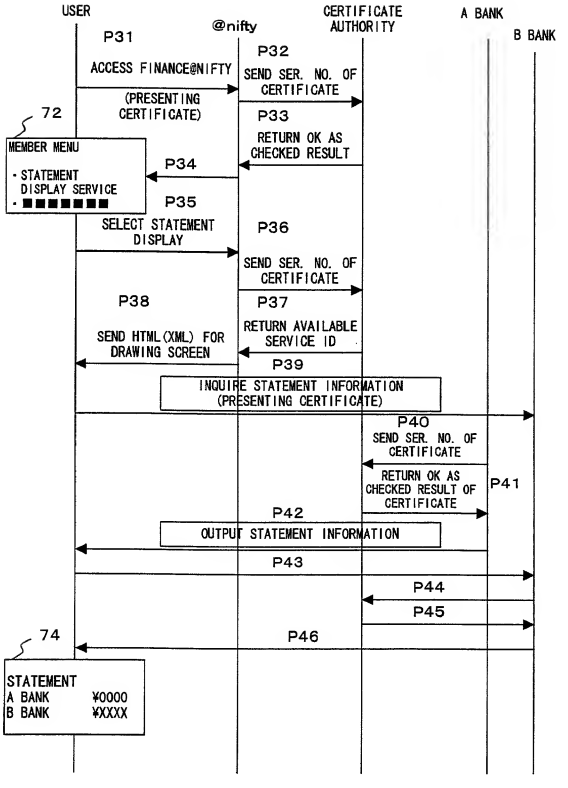
USER
@nifty
CERTIFICATE AUTHORITY
A BANK
B BANK
P31
ACCESS FINANCE@NIFTY
(PRESENTING CERTIFICATE)
P32
SEND SER. NO. OF CERTIFICATE
P33
RETURN OK AS CHECKED RESULT
72
MEMBER MENU
・STATEMENT DISPLAY SERVICE
P34
P35
SELECT STATEMENT DISPLAY
P36
SEND SER. NO. OF CERTIFICATE
P37
RETURN AVAILABLE SERVICE ID
P38
SEND HTML(XML) FOR DRAWING SCREEN
P39
INQUIRE STATEMENT INFORMATION (PRESENTING CERTIFICATE)
P40
SEND SER. NO. OF CERTIFICATE
RETURN OK AS CHECKED RESULT OF CERTIFICATE
P41
P42
OUTPUT STATEMENT INFORMATION
P43
P44
P45
74
P46
STATEMENT
A BANK ¥0000
B BANK ¥XXXX

FIG. 11

SERVICE ID	SERVICE A
COMPANY ID	a a a a a
CONDITION 1: SEX	☐ MALE ■ FEMALE ☐ NOT CONCERNED
CONDITION 2: AGE	40 YEARS OLD OR UNDER
CONDITION 3: ANNUAL INCOME	¥ 600 0,000 OR ABOVE
CONDITION 4: COMPANY OF EMPLOYMENT	~
⋮	⋮
CONDITION T: COMPANY OF EMPLOYMENT	~
SERVICE CATEGORY	~
SERVICE NAME	~
SERVICE SUMMARY	~
APPLICATION URL	~
MEMBERSHIP INQUIRY E-MAIL	~

FIG. 12

SERVICE ID		SERVICE A
And check	QUALIFICATION CRITERIA	
	COMPANY ID	SERVICE ID
／	aaaaa	＊＊＊＊B, ＊＊＊＊C,
■	bbbbb	
	ccccc	＊＊＊＊D

FIG. 13

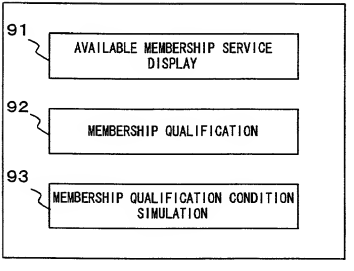
91
AVAILABLE MEMBERSHIP SERVICE DISPLAY
92
MEMBERSHIP QUALIFICATION
93
MEMBERSHIP QUALIFICATION CONDITION SIMULATION

FIG. 14

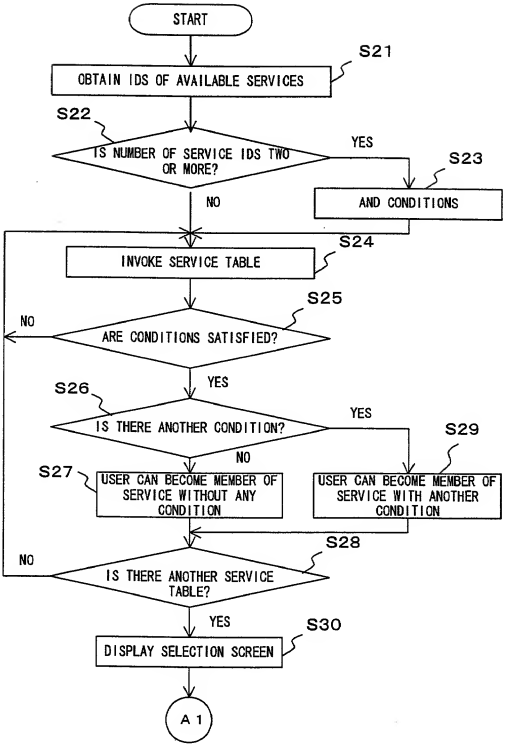
START
S21
OBTAIN IDS OF AVAILABLE SERVICES
S22
IS NUMBER OF SERVICE IDS TWO OR MORE?
YES
S23
AND CONDITIONS
NO
S24
INVOKE SERVICE TABLE
S25
NO
ARE CONDITIONS SATISFIED?
YES
S26
IS THERE ANOTHER CONDITION?
YES
S29
NO
S27
USER CAN BECOME MEMBER OF SERVICE WITHOUT ANY CONDITION
USER CAN BECOME MEMBER OF SERVICE WITH ANOTHER CONDITION
S28
NO
IS THERE ANOTHER SERVICE TABLE?
YES
S30
DISPLAY SELECTION SCREEN
A1

FIG. 15

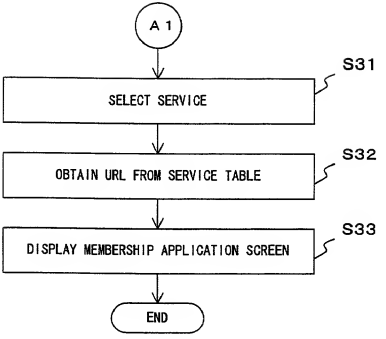
A 1
S31
SELECT SERVICE
S32
OBTAIN URL FROM SERVICE TABLE
S33
DISPLAY MEMBERSHIP APPLICATION SCREEN
END

FIG. 16

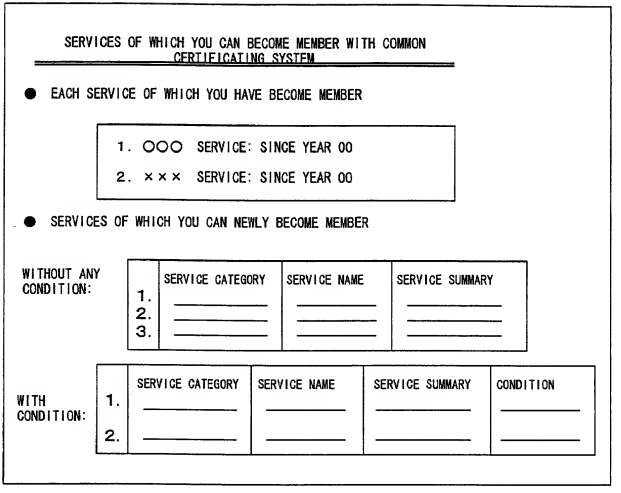
SERVICES OF WHICH YOU CAN BECOME MEMBER WITH COMMON CERTIFICATING SYSTEM
● EACH SERVICE OF WHICH YOU HAVE BECOME MEMBER
1. ○○○ SERVICE: SINCE YEAR 00
2. ××× SERVICE: SINCE YEAR 00
● SERVICES OF WHICH YOU CAN NEWLY BECOME MEMBER
WITHOUT ANY CONDITION:
SERVICE CATEGORY
SERVICE NAME
SERVICE SUMMARY
1.
2.
3.
WITH CONDITION:
SERVICE CATEGORY
SERVICE NAME
SERVICE SUMMARY
CONDITION
1.
2.

FIG. 17

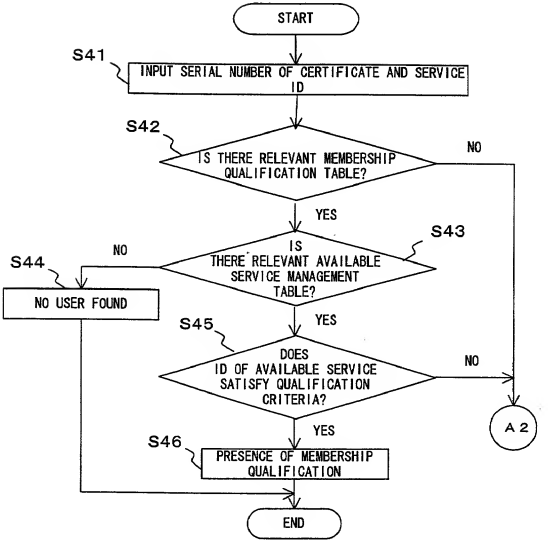
START
S41
INPUT SERIAL NUMBER OF CERTIFICATE AND SERVICE ID
S42
IS THERE RELEVANT MEMBERSHIP QUALIFICATION TABLE?
NO
YES
S43
IS THERE RELEVANT AVAILABLE SERVICE MANAGEMENT TABLE?
NO
S44
NO USER FOUND
YES
S45
DOES ID OF AVAILABLE SERVICE SATISFY QUALIFICATION CRITERIA?
NO
A2
YES
S46
PRESENCE OF MEMBERSHIP QUALIFICATION
END

FIG. 18

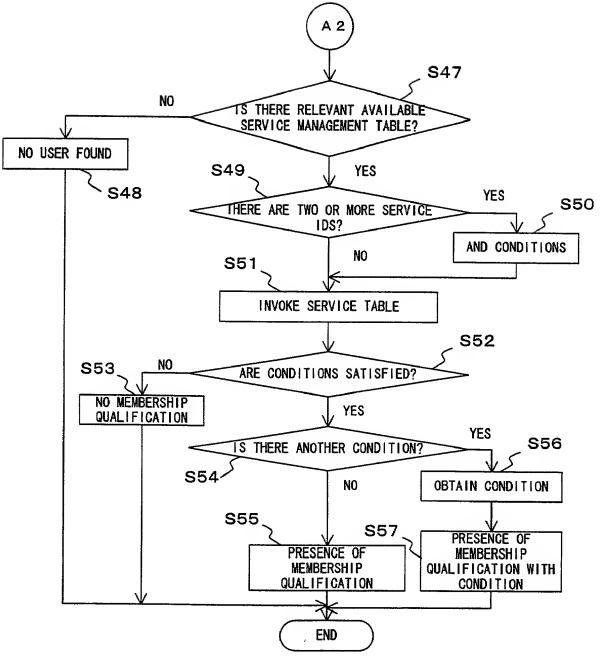
A 2
S47
IS THERE RELEVANT AVAILABLE SERVICE MANAGEMENT TABLE?
NO
NO USER FOUND
S48
YES
S49
THERE ARE TWO OR MORE SERVICE IDS?
YES
S50
AND CONDITIONS
NO
S51
INVOKE SERVICE TABLE
S52
ARE CONDITIONS SATISFIED?
S53
NO
NO MEMBERSHIP QUALIFICATION
YES
IS THERE ANOTHER CONDITION?
YES
S56
S54
NO
OBTAIN CONDITION
S55
PRESENCE OF MEMBERSHIP QUALIFICATION
S57
PRESENCE OF MEMBERSHIP QUALIFICATION WITH CONDITION
END

FIG. 19

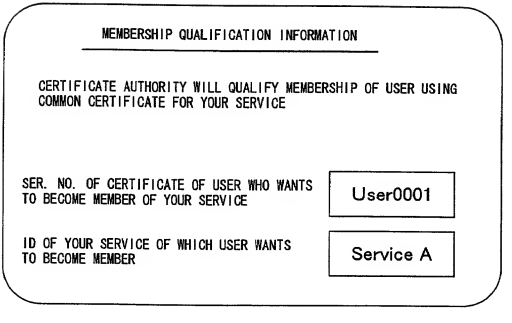
MEMBERSHIP QUALIFICATION INFORMATION
CERTIFICATE AUTHORITY WILL QUALIFY MEMBERSHIP OF USER USING COMMON CERTIFICATE FOR YOUR SERVICE
SER. NO. OF CERTIFICATE OF USER WHO WANTS TO BECOME MEMBER OF YOUR SERVICE
User0001
ID OF YOUR SERVICE OF WHICH USER WANTS TO BECOME MEMBER
Service A

FIG. 20

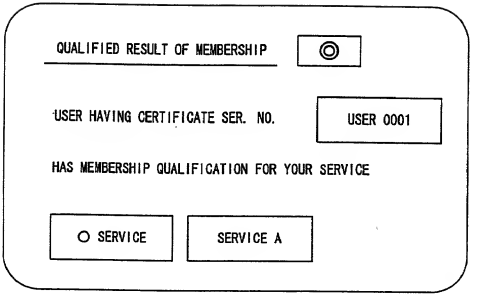
QUALIFIED RESULT OF MEMBERSHIP
USER HAVING CERTIFICATE SER. NO.
USER 0001
HAS MEMBERSHIP QUALIFICATION FOR YOUR SERVICE
O SERVICE
SERVICE A

FIG. 21

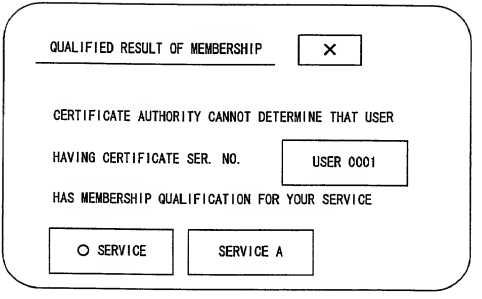
QUALIFIED RESULT OF MEMBERSHIP
×
CERTIFICATE AUTHORITY CANNOT DETERMINE THAT USER
HAVING CERTIFICATE SER. NO.
USER 0001
HAS MEMBERSHIP QUALIFICATION FOR YOUR SERVICE
O SERVICE
SERVICE A

FIG. 22

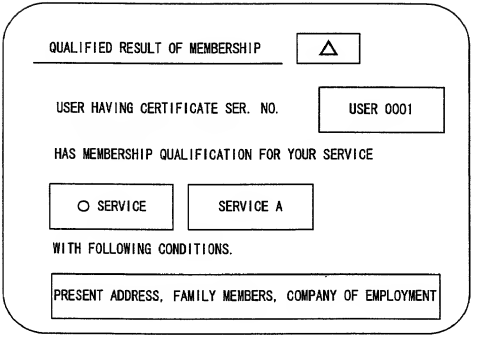
QUALIFIED RESULT OF MEMBERSHIP
△
USER HAVING CERTIFICATE SER. NO.
USER 0001
HAS MEMBERSHIP QUALIFICATION FOR YOUR SERVICE
○ SERVICE
SERVICE A
WITH FOLLOWING CONDITIONS.
PRESENT ADDRESS, FAMILY MEMBERS, COMPANY OF EMPLOYMENT

FIG. 23

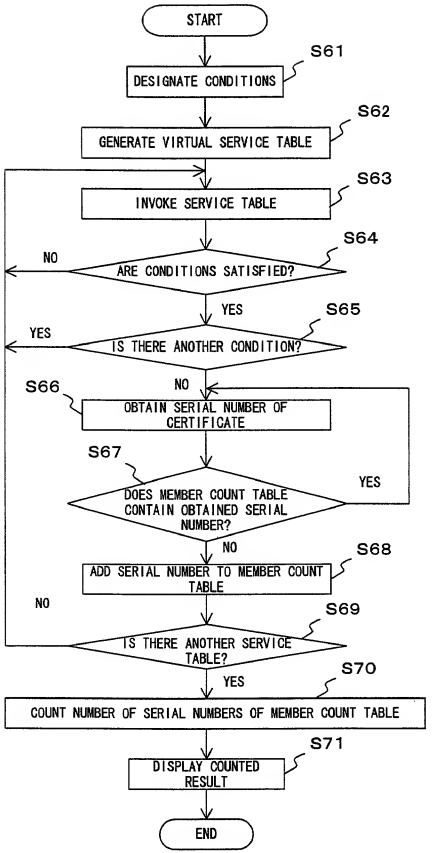
START
S61
DESIGNATE CONDITIONS
S62
GENERATE VIRTUAL SERVICE TABLE
S63
INVOKE SERVICE TABLE
S64
NO
ARE CONDITIONS SATISFIED?
YES
S65
YES
IS THERE ANOTHER CONDITION?
NO
S66
OBTAIN SERIAL NUMBER OF CERTIFICATE
S67
DOES MEMBER COUNT TABLE CONTAIN OBTAINED SERIAL NUMBER?
YES
NO
S68
ADD SERIAL NUMBER TO MEMBER COUNT TABLE
NO
S69
IS THERE ANOTHER SERVICE TABLE?
YES
S70
COUNT NUMBER OF SERIAL NUMBERS OF MEMBER COUNT TABLE
S71
DISPLAY COUNTED RESULT
END

FIG. 24

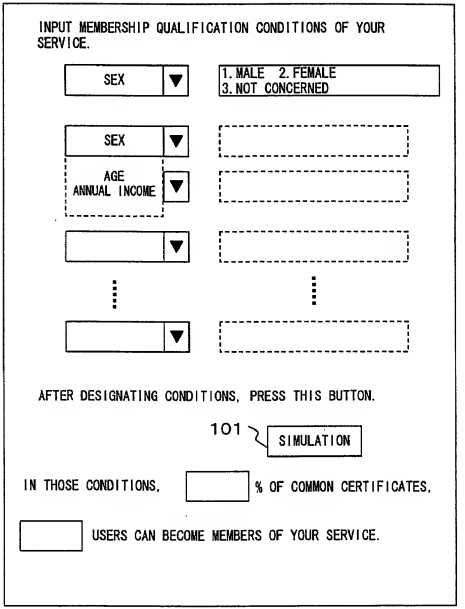
INPUT MEMBERSHIP QUALIFICATION CONDITIONS OF YOUR SERVICE.
SEX
1. MALE 2. FEMALE
3. NOT CONCERNED
SEX
AGE
ANNUAL INCOME
AFTER DESIGNATING CONDITIONS, PRESS THIS BUTTON.
101
SIMULATION
IN THOSE CONDITIONS,
% OF COMMON CERTIFICATES,
USERS CAN BECOME MEMBERS OF YOUR SERVICE.

FIG. 25

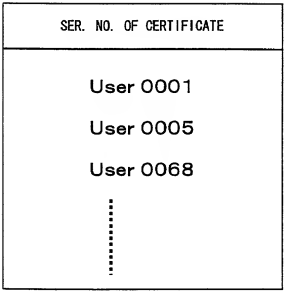

FIG. 26

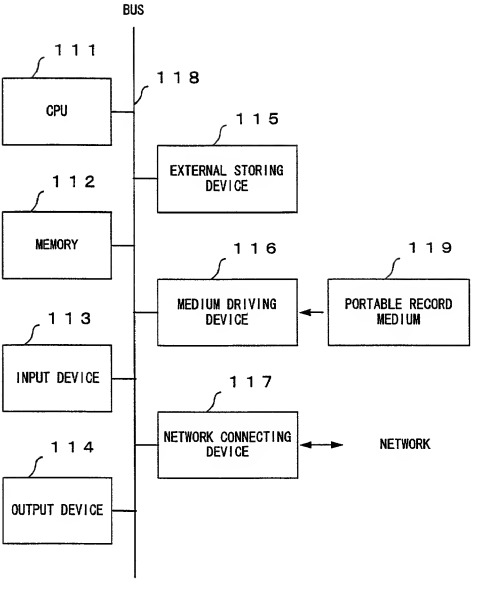
BUS
111
CPU
118
115
EXTERNAL STORING DEVICE
112
MEMORY
116
119
MEDIUM DRIVING DEVICE
PORTABLE RECORD MEDIUM
113
INPUT DEVICE
117
NETWORK CONNECTING DEVICE
NETWORK
114
OUTPUT DEVICE

FIG. 27

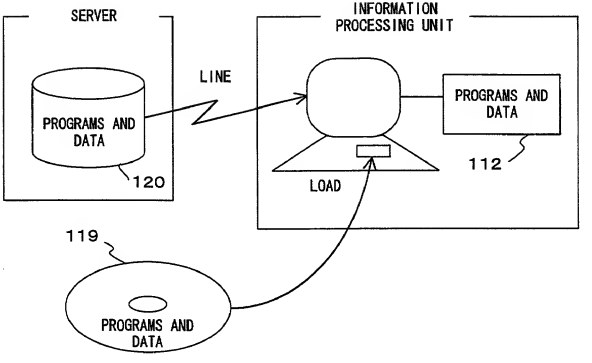
SERVER
INFORMATION PROCESSING UNIT
LINE
PROGRAMS AND DATA
120
PROGRAMS AND DATA
112
LOAD
119
PROGRAMS AND DATA

FIG. 28